

## **REMARKS**

The above amendments and these remarks are responsive to the Office action dated July 19, 2006. Claims 1, 6, 7 and 11-39 are pending in the application. Claims 11-39 are withdrawn. Claims 1, 6 and 7 are rejected. Applicants have amended claims 1, 6, and 7. In view of the above amendments and the following remarks, Applicants request reconsideration of the rejected claims under 37 C.F.R. § 1.111.

Applicants thank the Examiner for the granting their Request for Continued Examination.

### ***Objections to the Claims***

Claims 1, 6, and 7 are objected to due to informalities in the claims. Without acknowledging the propriety of the Examiner's objections, Applicants have amended the claims as suggested by the Examiner in order to facilitate the prosecution of the application.

In particular, Applicants have amended claim 1 at line 1 by deleting "a"; at line 6 by deleting "substrate" and inserting --substrates—therefore; at claim 6, line 1 by deleting "a"; and at claim 7, line 1 by deleting "a". In view of the above amendments, Applicants respectfully request the withdrawal of the objections to claims 1, 6, and 7.

### ***Rejections under 35 U.S.C. § 112***

The Examiner has rejected claim 7 under 35 U.S.C. § 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly claim the subject matter that the Applicants regard as the invention. In particular, the Examiner suggests that the method of claim 7 requires a step wherein after the adhesive is semi-cured or cured, the first and second disc substrates are transferred to a next process and the adhesive is further cured. The Examiner suggests that it is unclear how a cured adhesive can undergo further curing.

Applicants suggest that a given term or terms in the claims should not be analyzed 'in a vacuum', but are properly evaluated in light of the teaching and content of the specification, the teachings of the prior art, and the claim interpretation that would be given by an artisan of ordinary skill in the pertinent art.

Given that guidance of the specification and the teachings of the prior art, Applicants respectfully suggest that the term "cured" as used in claim 7 would not be construed to correspond to a completely hardened state. As used in the specification, "cured" refers to a state in which it is possible to prevent the adhesive from spreading. In particular, as noted at page 11, line 22 to page 12, line 2, "The emission mechanism may semi-cure or cure the adhesive in a non-recording region of the disc substrates.... Furthermore, it is possible to adjust the spread of the adhesive in the internal circumference of the disc substrates, thus preventing adhesive from protruding from the internal circumference of the center hole of the disc substrates". Therefore, as used in the present application, and in the context of optical disc manufacture, "cured" is a state in which the adhesive does not protrude from the internal circumference of the center hole

of the disc substrate.

In contrast, as used in the present application, the term "semi-cured" may include a state in which the adhesive is soft and can protrude from the internal circumference of the center hole of the disc substrate. Therefore, it is neither redundant nor indefinite to refer to both "cured" and "semi-cured" in claim 7. In view of the above remarks, Applicants suggest that claim 7, as currently pending, particularly and distinctly defines the claimed subject matter. Applicants therefore request the withdrawal of the rejection of claim 7 under 35 U.S.C. § 112, second paragraph.

### ***Rejections under 35 USC § 103***

Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maenza (U.S. Patent 5,968,305) in view of Young (U.S. Patent 6,561,640), Tsuboi et al. (JP 62-155965), Ohno et al (U.S. Patent No. 6,613,170 and Anzai et al. (U.S. Patent No. 6,485,808).

The Examiner suggests that it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the uv light from a narrowband uv light source as taught by Maenza using any of the functionally equivalent narrowband uv light sources known in the art including scanning laser, LED, etc., as shown by Young, as only the expected results of applying uv light without wasting energy would be achieved. Applicants respectfully disagree.

In particular, Applicants disagree that "Maenza teaches a narrowband uv light

source is preferable to a wideband uv light source ..." as suggest by the Examiner (at page 3-4 of the Office Action). The Maenza references only suggests that "... Wideband light sources are difficult to spectrally control and generate large amounts of infrared ("IR") energy. ... ". While this could be considered a suggestion that wideband uv light is not preferred, it does not rise to the level required for obviousness under 35 U.S.C. § 103, i.e. suggesting the desirability of the claimed invention. Maenza fails to suggest that a narrowband uv light source is preferable, and in fact, Maenza fails to use the description "narrow" at all.

Additionally, the Young reference is directed to systems and methods of printing. Applicants suggest that one of ordinary skill in the art of optical disc manufacture would not properly be lead to the literature associated with ink-jet printing to find the solution to a problem present in optical disc manufacture. Applicants suggest that Young is neither in the field of the Applicants' endeavor, nor is it reasonably pertinent to optical disc manufacture, and so corresponds to nonanalogous art.

Even if Maenza and Young were to be combined, the Young reference is directed to methods of drying applied inks. While a skilled artisan might be led by Young to a particular method of drying the ink on a DVD or similar printed surface after production, Young fails to provide any particular motivation to apply the invention of Young to the production of a disc substrate, and in particular, to curing the resin used in disc substrate manufacture. Moreover, Maenza fails to provide any motivation to look to, and to apply, printing technology to the production of an optical disc substrate. Applicants therefore

respectfully suggest that there can be no motivation to combine Young and Maenza as suggested by the Examiner.

Furthermore, with respect to a low speed rotation of Tsuboi et al., the reference discloses that the optical disc 21 is rotated at a high speed in order to spread the resin. Subsequently, the optical disc 21 is transported into the lamp house 50, and the optical disc 21 is rotated at a low speed. In contrast to the teaching of Tsuboi et al., in the present application both operations of spreading at a high speed rotation and radiating UV at a low speed are conducted on the same rotation table. Therefore, the claimed method is distinct from the process described by Tsuboi et al.. Applicants take this opportunity to amend claim 1 in order to more particularly claim their invention. As amended, claim 1 recites that the first and second substrates are mounted on a table during rotation and during irradiation.

Moreover, Applicants suggest that it is inappropriate to combine the teachings of the Tsuboi et al. and Maenza references. The Tsuboi et al. reference is directed to a process where resin is spread on only one disc substrate, and fails to disclose a process wherein resin or adhesive is bound between two disc substrates (see FIG. 1 of Tsuboi et al.). If the resin or the adhesive were bound between the two disc substrates of Tsuboi et al., rotation would be stopped, and the second disc would subsequently be set. However, such a production step is not disclosed in Tsuboi et al., and modifying Tsuboi et al. so as to include such a production step would change the principle of operation of the Tsuboi et al. reference. Specifically, Tsuboi et al. has as an object to “make spin coating and resin

curing with high efficiency” (see the Abstract of Tsuboi et al.). Additionally, such a production step might also create small bubbles to occur between the disc substrates of Tsuboi et al., rendering the method of Tsuboi et al. unsatisfactory for its intended purposes. For at least these reasons, there can be no motivation to modify the process of Tsuboi et al. as suggested by the Examiner, and there can therefore be no suggestion of motivation to combine the Tsuboi et al. and Maenza references.

Applicants additionally suggest that it is improper to combine the Ohno et al. and Maenza references as suggested by the Examiner. Ohno et al. disclose a process of curing resin between two substrates by first irradiating an inner annular region of the substrates, followed by a subsequent radiation of the disc substrate overall. However, the teachings of Ohno et al. contradict the disclosure of Maenza, as Maenza stresses line-by-line scanning of the optical disc substrates, in order to avoid warping, unevenness or irregularity upon curing the adhesive. Applicants respectfully suggest that there is insufficient teaching or motivation to combine the Ohno et al. and Maenza references, and so their combination in order to establish obviousness under 35 U.S.C. § 103 is improper.

Additionally, the Examiner suggests that the utilization of a high density array of light emitting semiconductor elements is obvious, as it would have only required ordinary skill and routine experimentation. Applicants suggest that it is improper to evaluate the obviousness of this or that feature of the invention in isolation. Rather, the obviousness of the claimed invention as a whole must be considered. Furthermore, neither the fact that

the references *can* be combined, nor that the claimed invention is within the capabilities of one of ordinary skill is sufficient by itself to establish *prima facie* obviousness.

The Examiner suggests that it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine the distance of the uv light source from the disc substrate, and that routine experimentation and the specific distance of 10 mm or less are shown by Anzai et al. As discussed above, it is the obviousness of the claimed invention as a whole which must be considered, and neither the fact that the references *can* be combined, nor that the claimed invention is within the capabilities of one of ordinary skill is sufficient by itself to establish *prima facie* obviousness.

Furthermore, Anzai et al. is not concerned with curing adhesive. Rather, Anzai et al. describes uv radiation onto a surface of a polycarbonate substrate in order to reform or refine the surface of the substrate, and to flatten the surface itself. This is an entirely different application of uv irradiation, with a distinct object from that of the present application. One of ordinary skill would not look to Anzai et al. for guidance in curing resin. Furthermore, as indicated at page 22, lines 4-8 of the specification, "Ultraviolet light may be radiated onto the substrates ... However, in order to achieve uniformity of the amount of ultraviolet light irradiation, it is preferable to radiate ultraviolet light while rotating the substrates 10 at low speed. While the substrates 10 are rotating, ultraviolet light is radiated, and the substrates 10 may stop during irradiation."

In view of the above remarks and amendments, Applicants respectfully suggest

that the Examiner has failed to establish the *prima facie* obviousness of the subject matter of claims 1 and 7. For at least the reasons provided above, Applicants respectfully request the withdrawal of the rejection of claims 1 and 7 under 35 U.S.C. § 103(a).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maenza, Young, Tsuboi et al, Ohno et al., and Anza et al. as applied to claims 1 and 7, and further in view of Amo et al. (U.S. Patent No. 5,779,855). Applicants respectfully disagree.

As discussed above, Applicants suggest that the combination of Maenza, Young, Tsuboi et al. Ohno et al., and Anza et al., as applied to claims 1 and 7, is improper, and that even in combination the references fail to establish the *prima facie* obviousness of claims 1 and 7. Applicants respectfully suggest that even in combination with Amo et al., the cited references fail to render the subject matter of dependent claim 6 obvious under 35 U.S.C. § 103. Applicants therefore respectfully request the withdrawal of the rejection of claim 6 under 35 U.S.C. § 103(a).

It is believed that the subject patent application has been placed in condition for allowance, and such action is respectfully requested. If the Examiner has any questions or concerns, or if a telephone interview would in any way advance prosecution of the application, please contact the undersigned agent of record.

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 11-1540.



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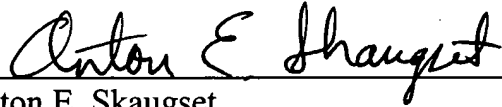
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